

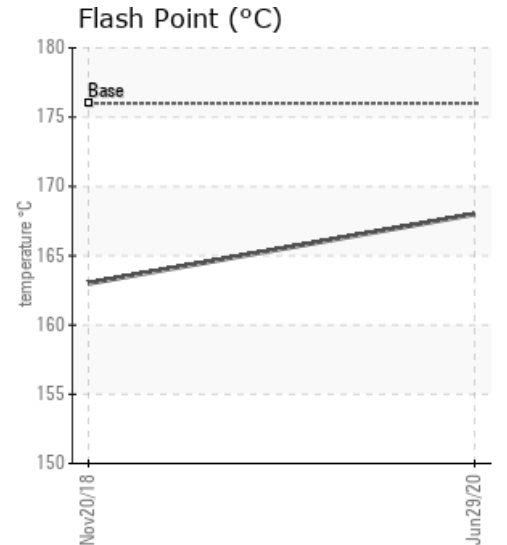
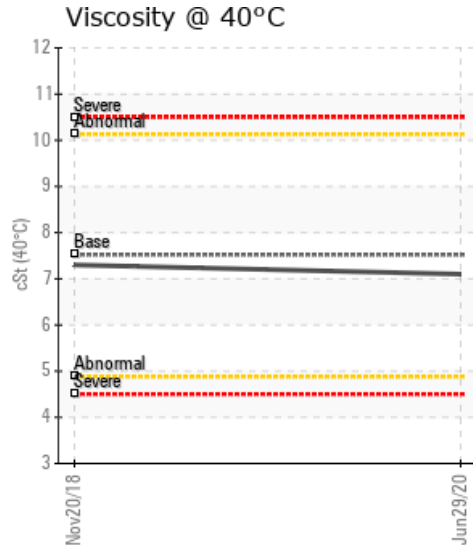
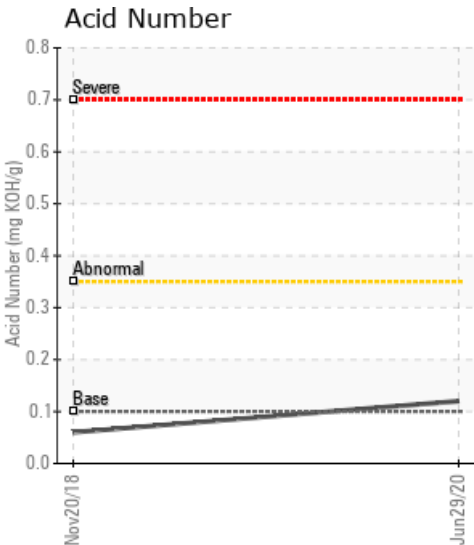
INOAC HOT OIL SIDE HOT OIL DRAIN

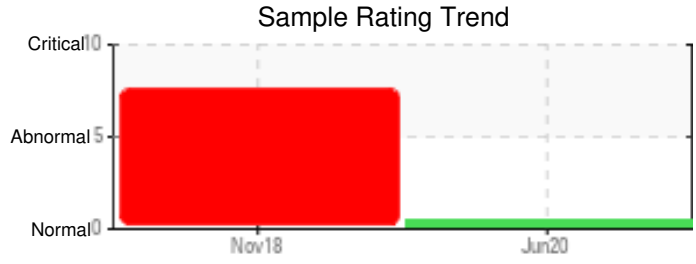
Customer: PTRHTF30023	System Information	Sample Information
INOAC INTERIOR SYSTEMS 575 JAMES STREET SOUTH ST MARYS, ON N4X 1B9 Canada Attn: ANDREW COCKBURN Tel: (519)349-3323 E-Mail: ANDREW.COCKBURN@JCI.COM	System Volume: 14000 ltr Bulk Operating Temp: 500F / 260C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO LT Make: BP&R	Lab No: 02362192 Analyst: Lynn Billings Sample Date: 06/29/20 Received Date: 06/30/20 Completed: 07/06/20 Lynn Billings lynn.billings@petrocanadalsp.com

Recommendation: Current analysis of the Hot Oil system indicates the oil is suitable for continued use. Acid number and viscosity are fine, with very little water in the system. GCD profile is consistent with Calflo LT. No wear metals present. Pentane insoluble have shown a slight increase. Please ensure that the sample line is flushed thoroughly to remove any insoluble that may have accumulated before the sample is taken. Resample at next interval.

Comments:

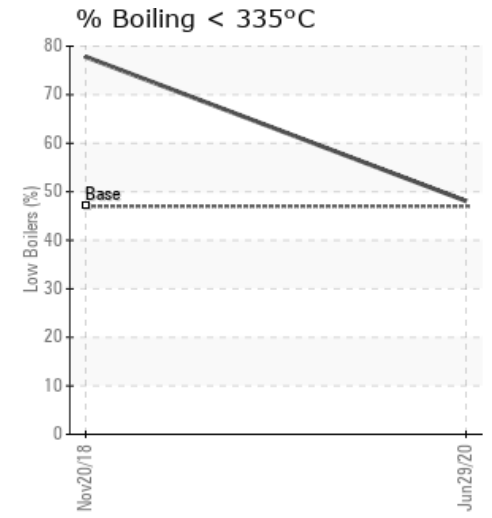
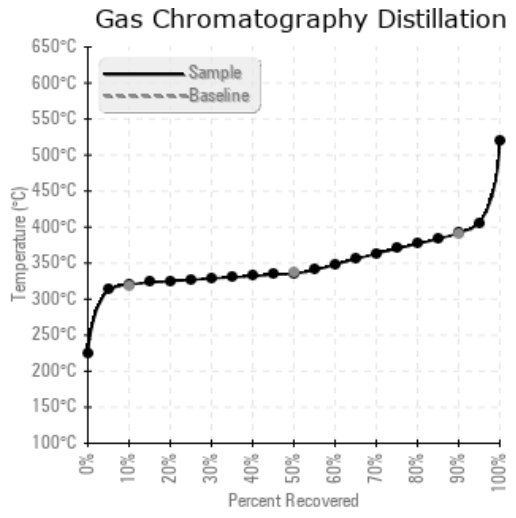
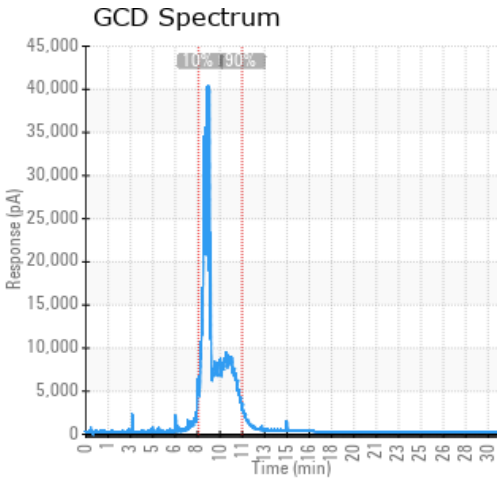
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
06/29/20	06/30/20	0d	POWDER SLUSH	334 / 168	16.8	7.1	0.12	0.171	608 / 320	636 / 336	737 / 392	48.09
11/20/18	11/26/18	0d		325 / 163	10.3	7.3	0.06	0.043	539 / 282	581 / 305	661 / 349	77.82
Baseline Data				349 / 176		7.52	0.1		604 / 318	640 / 338	734 / 390	47.0





Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
06/29/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85	0
11/20/18	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	0
Baseline Data			0	0						0			0	0				0	0				270	

Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



Historical Comments	
11/20/18	Appears to be some low boilers in the system. Flash point is reduced a little and the amount of material <335°C is elevated, 50% point is lowered, with the 90% Distillation point lower than normal. Please vent expansion tank for a day when the unit is at operating temperature, to release low boilers from system. Resample system after venting. All other parameters okay, viscosity is typical for Calflo LT, no water present, no appreciable amount of solids as Pentane insoluble level at 0.048% (GCD) % < 335°C is severely high. (GCD) 90% Distillation Point is severely low. (GCD) 10% Distillation Point is marginally low. (GCD) 50% Distillation Point is marginally low.

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